Every defect is a treasure—V

Quality problems that result in adverse outcomes provide opportunities for quality improvement.
A series based on actual examples of care.

Accidental drug dosage error

An infant experiences respiratory arrest after receiving an overdose of morphine.

A child born prematurely at 35 weeks was admitted to the hospital at 2 months of age to undergo a pyloromyotomy for treatment of pyloric stenosis.

In the first post-operative day, the physician orders 0.2–0.4 mg morphine sulfate, delivered subcutaneously or intramuscularly, for pain. Instead of using a 5 mg/ml vial, which is her customary practice, the nurse uses a 10 mg/ml vial of morphine sulfate. The nurse calculates that she needs 0.04 ml of medication in the syringe. She double-checks the dosage with another nurse, who does not question the calculations. However, instead of 0.04 ml, the administering nurse draws up 0.4 ml into the syringe, 10 times the intended dose.

Careful calculation of dosages is especially important when the medications are not packaged for pediatric use. Because calculations are based on weight, dosages can vary significantly within an age group. However, the effects of reminding staff to be more careful when calculating and administering medications are likely to be short-lived. Greater benefits are apt to derive from systemic improvements, especially those tailored to local needs. In a situation such as this, a hospital might standardize the concentration of stocked medications to reduce the possibility of calculation errors.

A practitioner’s response to an adverse drug event is influenced by many factors, including past experience and current assumptions. As knowledge about the rate of drug errors increases, practitioners may want to consider the possibility of wrong dose or wrong drug delivery in their differential diagnoses before assuming that patients are experiencing relatively uncommon drug reactions. Consideration of parental concerns can be seen by clinicians as an opportunity to review their own assumptions and possibly avoid an error.

Disclosing mistakes is never easy, but postponing the duty simply exacerbates the problem. Families’ suspicion and anger are fueled by delayed or dissembling explanations. Prompt, clear disclosure to a child’s parents can restore the physician/family alliance and allow everyone to concentrate more fully on the well-being of the child.

Shortly after administering the morphine sulfate to the infant, the nurse leaves the room. The infant’s mother is holding him when the infant begins having respiratory difficulty. The father summons the nurse, who finds the infant in respiratory arrest. A narcotic antagonist is administered and resuscitation is successfully performed. The parents are told that infants can sometimes have unusual reactions to medications, including morphine. They are assured that additional supervision with a cardiac or apnea monitor is not needed.

Approximately 10 minutes after the medical staff leave the room, the infant arrests again. After being stabilized, the infant is transferred to the Cardiac Intensive Care Unit of the hospital for observation.

The following day, 14 hours after the discovery of the medication error, the attending physician informs the infant’s parents of the overdose. They are told that the error was noted 1 hour after the administration of the morphine, during a routine narcotics count. The infant was discharged from the hospital in good condition. However, the parents brought a medical malpractice suit against the hospital, alleging negligent infliction of emotional distress.

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